

5 WHAT IS CLAIMED IS:

1. A method for timing the transmission of unsolicited grants (USGs) of bandwidth to transmit voice packets on a shared transmission medium comprising the steps of:

initializing a control terminal to receive packets of voice calls having parameters including a bit rate, a packetization interval, and a call identification;

creating a plurality of queues to define a corresponding plurality of phases at a sub-multiple of the packetization interval;

admitting voice calls to the control terminal;

distributing the voice calls among the queues in a predetermined order as the voice calls are admitted;

removing the voice calls from the queues as the voice calls are terminated; and

periodically issuing at the phases defined by the queues USGs that include a call identification and a grant of bandwidth sufficient to transmit the packets.

2. The method of claim 1, additionally comprising the step of deactivating a voice call in a queue when a silent period is detected in a queue so the size of the granted bandwidth excludes the deactivated voice call.

3. The method of claim 2, additionally comprising the step of reactivating a voice call in a queue when a detected silent period ends.

4. The method of claim 1, in which the bit rates and packetization intervals of all the voice calls are the same and all the admitted voice calls are distributed to each queue.

5. The method of claim 1, in which the voice calls have different packetization intervals and the number of phases equals the least common multiple of the different packetization intervals divided by the the smallest packetization interval.

6. The method of claim 1, in which the control terminal is a cable modem termination system (CMTS) and the shared transmission medium is a cable transmission system, the method

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5 additionally comprising the steps of receiving the USGs at cable modems connected to the cable
transmission system and transmitting voice packets from the cable modems to the CMTS
responsive to the received grants .

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